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09/835,293	04/13/2001	Erich Strasser	56/350	4866

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EXAMINER	
WASHBURN, DOUGLAS N	

ART UNIT	PAPER NUMBER
2863	

DATE MAILED: 02/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

H·A

Office Action Summary	Application No.	Applicant(s)	
	09/835,293	STRASSER, ERICH	
	Examiner	Art Unit	
	Douglas N. Washburn	2863	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 October 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,16-20,22 and 23* is/are rejected.

7)☒ Claim(s) *2-15 and 21* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *13 April 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1 The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 16-19 and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Burkhardt et al. (US 4,631,404)(Hereafter referred to as Burkhart).

Burkhardt teaches:

Detecting several angular positions of a scanning device in relation to at least one scale by detecting position measurements of the scanning device at several scanning points (scanning unit; column 3, lines 45 and 46; figure 4, element A1) in regard to claim 1;

Determining a value for a chronological progression of a change in angular positions of a scanning device from detected several angular positions of the scanning device (luminating unit; column 7, lines 32-42) in regard to claim 1;

A position measuring system comprising at least one scale (measurement scale; column 3, line 42; figure 4, element 6) in regard to claim 16;

A position measuring system comprising a scanning device that moves relative to at least one scale along a measuring direction (scanning unit; column 3, lines 45 and 46; figure 4, element A1) in regard to claim 16;

A position measuring system comprising an evaluation module (evaluating unit; column 3, lines 54-59) comprising:

A first module (scanning unit; column 6, lines 66-68) for determining angular positions of a scanning device from several measured position values in regard to claim 16;

A second module (luminating unit; column 7, lines 28-32) for determining a value for a chronological progression of several angular positions in regard to claim 16;

A memory device (scanning unit; column 13, lines 43-48), in which extreme values from several successive angular positions are stored in regard to claim 17;

A scanning device comprises at least two scanning points for scanning a scale and for forming measured position values, and wherein measured position values are provided to an evaluation unit, which processes a measured position values in such a way that a value for a chronological progression of angular positions is present at an output of the evaluation unit (column 7, lines 32-42) in regard to claim 18;

A scanning device comprises at least two scanning points for scanning a scale and for forming measured position values, and wherein measured position values are provided to an evaluation unit, which processes measured position values in such a way that a value for chronological progression of angular positions is present at an output of the evaluation unit (column 7, lines 32-42) in regard to claim 19;

And a first module (scanning unit; column 6, lines 66-68) and a second module (luminating unit; column 7, lines 28-32) are formed in a common component (figure 8) in regard to claim 23.

Claim Rejections - 35 USC § 103

2 The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Burkhardt in view of Hagl et al. (US 6,043,482)(Hereafter referred to as Hagl).

Burkhardt teaches:

A position measuring system comprising at least one scale (measurement scale; column 3, line 42; figure 4, element 6) in regard to claim 16;

A position measuring system comprising a scanning device that moves relative to at least one scale along a measuring direction (scanning unit; column 3, lines 45 and 46; figure 4, element A1) in regard to claim 16;

A position measuring system comprising an evaluation module (evaluating unit; column 3, lines 54-59) comprising:

A first module (scanning unit; column 6, lines 66-68) for determining angular positions of a scanning device from several measured position values in regard to claim 16;

A second module (luminating unit; column 7, lines 28-32) for determining a value for a chronological progression of several angular positions in regard to claim 16;

A scanning device comprises at least two scanning points for scanning a scale and for forming measured position values, and wherein measured position values are provided to an evaluation unit, which processes measured position values in such a way that a value for chronological progression of angular positions is present at an output of the evaluation unit (column 7, lines 32-42) in regard to claim 18.

Burkhardt does not fully teach an evaluation unit is integrated into a scanning device in regard to claim 20.

Hagl teaches an evaluation unit is integrated into a scanning device (column 1, lines 35-38) in regard to claim 20.

Regarding claim 20, it would have been obvious to one skilled in the art at the time of the instant invention to modify the teaching of Barnhardt of a scanning device and evaluation unit with the teaching of Hagel of an optical position-measuring apparatus includes a scale, scanning unit and evaluation unit because integrating a scanning device and an evaluation unit would have simplified construction and manufacture while still providing mechanical stability.

Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Barnhardt in view of Schwaiger et al. (US 5,294,793)(Hereafter referred to as Schwaiger).

Burkhardt teaches:

A position measuring system comprising at least one scale (measurement scale; column 3, line 42; figure 4, element 6) in regard to claim 16;

A position measuring system comprising a scanning device that moves relative to at least one scale along a measuring direction (scanning unit; column 3, lines 45 and 46; figure 4, element A1) in regard to claim 16;

A position measuring system comprising an evaluation module (evaluating unit; column 3, lines 54-59) comprising:

A first module (scanning unit; column 6, lines 66-68) for determining angular positions of a scanning device from several measured position values in regard to claim 16;

A second module (luminating unit; column 7, lines 28-32) for determining a value for a chronological progression of several angular positions in regard to claim 16;

A scanning device comprises at least two scanning points for scanning a scale and for forming measured position values, and wherein measured position values are provided to an evaluation unit, which processes measured position values in such a way that a value for chronological progression of angular positions is present at an output of the evaluation unit (column 7, lines 32-42) in regard to claim 18.

Burkhardt does not fully teach at least one scale comprises a first scale that is arranged parallel with a second scale on a first machine element, and at least two scanning points are arranged on a second machine element, wherein the first and second machine elements form a gantry structure in regard to claim 22.

Schwaiger teaches at least one scale comprises a first scale that is arranged parallel with a second scale on a first machine element, and at least two scanning points are arranged on a second machine element, wherein the first and second machine elements form a gantry structure (figure 5) in regard to claim 22.

Regarding claim 22, it would have been obvious to one skilled in the art at the time of the instant invention to modify the teaching of Barnhardt of a scanning device and evaluation unit with the teaching of Schwaiger of a first scale that is arranged parallel with a second scale on a first machine element, and said at least two scanning points are arranged on a second machine element, wherein said first and second machine elements form a gantry structure because the structure provides different scanning clearances between the reading devices and the measuring scales.

Response to Amendment

3 Applicant amendment fails to overcome §102 (b) rejection of claims 1, 16-19 and 23 and the rejection is maintained.

Applicant amendment fails to overcome §103 (a) rejection of claims 20 and 22 the rejection is maintained.

Allowable Subject Matter

4 Claims 2-15 and 21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Reasons for indicating allowability of claims 2-15 and 21 were previously presented in office action mailed 21 September 2005.

Response to Arguments

5 Applicant's arguments filed 27 October 2005 have been fully considered but they are not persuasive.

Applicant argument regarding claims 1, 16-19 and 23 suggesting Burkhardt does not teach, suggest or disclose "either 1) the recited detecting several angular inclinations or 2) determining the recited value for a chronological progression of a change in angular inclination of the scanning device." fails to persuade withdrawl of §102 (b) because as Burkhardt teaches "signals generated by the scanning unit A1 in response to relative movement of the incremental graduation T1 are detected in an evaluating unit (not shown) and displayed as a path or position value." (column 3, lines 54-58) reading broadly on the claimed limitation of the instant invention because, as Burkhardt further discloses "The absolute position value of the second reference mark R2.sub.i is superimposed on the absolute position value of the first reference mark R1.sub.i with the correct algebraic sign (+ or -), along with the counting value of the counter." (column 13, lines 19-23) suggesting an inclination (error) value as descibed in the specification of the instant invention "...the angle W as a deviation (emphasis added) from the desired position WO. ... The difference between P1 and P4 is a measure of the instantaneous angle W.". Therefore, Burkhardt does teach, suggest or disclose detecting several angular inclinations.

Further, applicant argues Burkhardt fails to teach, suggest or disclose "determining the recited value for a chronological progression of a change in angular inclination of the scanning device.".

Burkhardt teaches "...periodic analog signals are transformed into pulses in an evaluating unit (not shown) of the angle measuring system. These pulses are fed to a counter of the evaluating unit which counts the pulses to determine a position value that can be displayed in digital form in a display unit or can be directly conducted to a numerical control arrangement of the industrial robot." (column 3, lines 35-42) which reads on the broadly claimed limitations of the instant invention.

Examiner notes applicant arguments regarding claims 20 and 22 are based upon the above argument and stand or fall accordingly.

Therefore, applicant arguments regarding claims 1, 16-19, 20, 22 and 23 are not persuasive and the rejections are maintained.

Conclusion

6 **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Douglas N. Washburn whose telephone number is (571) 272-2284. The examiner can normally be reached on Monday through Thursday 6:30 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E. Barlow can be reached on (571) 272-2269. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DNW

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